pared were in equally bad feather. The National Museum having subsequently acquired a much better series of *P. arizonæ*, a second comparison of the Texas bird has been made, the result being quite unexpected, since it proves to be identical with a Mexican form, apparently quite distinct from *P. arizonæ*, and to which the name *Coturniculus mexicanus* was given by Mr. George N. Lawrence, in 1867. The latter name was in the History of North American Birds (*ii*, p. 38, foot-note) referred as a synonym to *Peucæa botterii* Scl., of Eastern Mexico (Orizaba), a disposition which I am now convinced was erroneous. A second Mexican example of *P. mexicana* has been sent to the National Museum by Prof. A. Dugès, from Guanajuato, and proves to be so closely similar to Dr. Merrill's specimen, and also to the type of "*Coturniculus mexicanus*, as to leave no doubt as to their identity.

The synonymy of the species is as follows:

—Peucæa mexicana (Lawr.).

Coturniculus mexicanus Lawr., Ann. Lyc. N. Y., viii, 1867, 474 (mountains of Colima).

Peucæa æstivalis var. *botterii* B. B. & R., Hist. N. Am. B., ii, 1874, 38, foot-note (part). (Nec *Zonotrichia botterii* Scl., 1857.)

Peucæa arizonæ Ridgw. and Merrill, Pr. U. S. Nat. Mus., vol. i, 1878, 127 (near Fort Brown, Tex.). Nec *Peucæa æstivalis* var. *arizonæ* Ridgw., 1874.)

Peucæa mexicana Ridgw., M. S.

ON DEPOSITS OF VOLCANIC DUST AND SAND IN SOUTHWESTERN NEBRASKA.

By GEORGE P. MERRILL.

In January, 1885, there were received at the National Museum two samples of a fine sharp dust marked "silicic acid," and which were supposed by the sender, Mr. Henry Zahn, of Plattsmouth, Nebraska, to be hot spring or geyser deposits, and were therefore called by him "Geyserite." Mr. Zahn states that the dust is found in small deposits in Western Kansas, Nebraska, eastern Colorado, and Wyoming. Concerning the two samples sent he writes: "The deposit of the gray sample is located in Furnas County, southwestern Nebraska, nearly 2 miles south of the Republican River, on sections 8 and 9, township 3 north, range 21 west of the sixth principal meridian. The white sample is from Harlan County, adjoining Furnas on the east, sections 10 and 11, township 2 north, range 20 west, a mile south of the Republican River. The deposits of this material occur mostly in this State, on the Republican River, extending into Kansas. By taking a map you will see numerous creeks flowing from the north and south and forming this river. Into the larger creeks flow numerous rivulets. On these streamlets we find the deposits, always on the east side, excepting the deposits in Harlan County, which I find on both sides of the ravine. The deposits occur from Guide Rock west to State line. * * * The de-

posits are found in many places in semicircles from 4 feet high to 10 feet, in different-colored layers and quality, of an inch in thickness, resting on fine sand or sandy calcareous marls. The largest deposit I have seen I found about 100 steps in the circle, with dips of 3 degrees. On top is generally found calcareous limestone (?) 6 to 12 inches thick, then comes coarse gravel and sometimes loess only. * * * These deposits I would judge to be about 100 feet higher than the level of the river. The white deposit in Harlan County, I find since I first discovered it, extends a good way under the hill. A farmer dug a well 2½ miles east and south and found the same deposit 4 feet thick, 30 feet from the surface."

A glance at the samples was sufficient to convince the writer that they were not the result of geyser action, but were probably of volcanic origin. One was of almost chalky whiteness, very finely pulverized, and of a sharp, gritty feeling when rubbed between the fingers. The second was gray in color, slightly coarser, and had, even to the naked eye, a flaky appearance. Submitted to microscopic examination both samples were found to consist almost entirely of the minute particles of amorphous glass, such as originate from the fine pulverization of a glassy pumice, with only occasionally a fragment of a greenish mineral that was apparently hornblende.

The figures given below show the more common forms of these flakes. The actual size of the larger one is some 0.3^{mm} in diameter.

On writing a second time to Mr. Zahn that gentleman was kind enough to forward samples of the sandstone from the top of the deposits and also another sample such as is found "in some places on top and sometimes below the deposit, or in close proximity." Both were very friable, crumbling readily between the thumb and fingers. Submitted to the microscope they proved to be composed entirely of small cleavage plates of a triclinic feldspar, particles of a green hornblende, grains of iron ore, and numerous other grains, evidently feldspathic, but otherwise undeterminable. No quartz was observed. All were distinctly rounded, having evidently been waterworn. From these facts the present writer does not hesitate to pronounce all the deposits as of volcanic origin, *i. e.*, volcanic dust and sand, owing their present evenly stratified condition to the assorting agencies of water and atmospheric currents.

As, so far as the writer is aware, no deposits of this nature have heretofore been recognized east of the Rocky Mountain region, this instance seems worthy of the space here devoted to it.

NATIONAL MUSEUM, *April* 2, 1885.